

**Research Foundation
Paper**

System 44 and READ 180:
Research-Based Literacy
Instruction for Special Education



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INTRODUCTION

According to the U.S. Department of Education, the number of special education students in the U.S. has almost doubled over the last three decades. In 1976–77, 3.7 million children and youth were served under the Federal Individuals with Disabilities Education Act (IDEA), representing 5% of all children and youth ages 3–21. By 2006–07, 6.7 million children and youth received IDEA services, about 9% of all 3- to 21-year-olds (Planty, Hussar, Snyder, Provasnik, Kena, Dinkes, Kewal, Ramani, & Kemp, 2008). Students may be classified as needing special education and receive an Individual Education Program (IEP) for numerous reasons, including learning, behavioral, cognitive, and physical disabilities. IDEA guarantees that all of these students with disabilities have access to a “free and appropriate public education.”

The U.S. Department of Education has made consistent efforts to ensure that special education placement does not necessarily mean separate services. The current law states that students with disabilities should only be removed from the regular educational environment in circumstances where the nature of a student’s disability precludes effective instruction even with the use of supplementary aids and services.

In the 15 years between 1990 and 2005, the number of students with disabilities taught in a general education classroom increased from 33% to 54%.

-Snyder, Dillow, & Hoffman, 2008

While data indicate that students with learning disabilities are getting more specialized services than ever before, all too often, teachers lack the tools and resources to be able to sufficiently collect data, analyze results, and vary the instructional content to the extent necessary for special education students to get the most of their regular education classes. As a result, many disabled students struggle to keep up academically with their peers without disabilities. According to the U.S. Department of Education, in 2005–06, only 57% of students with disabilities exited school with a regular high school diploma.

Scholastic has created two intensive intervention programs, *System 44* and *READ 180*, to help accelerate academic achievement for struggling readers, including those with disabilities. *System 44* addresses the foundational elements of the English language, providing a strong base in phonemic awareness, phonics, decoding, morphology, and orthography. For struggling readers who can read at approximately a 1.5 grade level and demonstrate facility with phonics and decoding, *READ 180* offers guidance in mastering oral reading fluency, academic language, text comprehension, writing, and grammar skills. This paper demonstrates how *System 44* and *READ 180* support special education students and their teachers by applying the most successful, research-proven approaches for teaching students with special needs. It also shows how the programs fit into a Response to Intervention framework.

OVERVIEW OF SYSTEM 44 AND READ 180

System 44 and *READ 180* provide intensive interventions for older struggling readers, including those with diagnosed reading disabilities. The programs consist of comprehensive and explicit instructional materials; adaptive, leveled software; multicultural and diverse paperbacks and audiobooks; and other program materials including Scholastic Achievement Manager (SAM), validated and actionable assessments, and embedded professional development and training. The core components of each program, described below, have been designed to address literacy and language problem areas for intensive, accelerated, and extensive reading instruction.

System 44

System 44 was designed for the most-challenged older readers. Many of these students are demotivated and disenfranchised from school as a result of years of academic failure. Intentionally metacognitive, *System 44* helps students understand that the English language is a finite system of 44 sounds and 26 letters that can be mastered. The program invites students to unlock the system and join the community of readers. *System 44* also provides educators with a comprehensive set of tools to help students meet this challenge.

The *System 44 Direct Instruction* scope and sequence, designed by renowned phonics instruction expert Dr. Marilyn Adams, systematically integrates lessons on sounds, sound spellings, high-utility sight words, and strategies for unlocking multisyllabic words, providing deep instruction and systematic, adaptive practice. Assured of mastery, students then apply their learning of these building blocks to new words and decodable text. This allows struggling readers to immediately begin building toward fluency and develop their ability to access diverse texts with increasing success.

The *System 44* Teaching Guide and *44Book* provide daily decoding and word-strategy lessons through direct, explicit, systematic instruction on the 44 sounds of the English language, syllable strategies, morphology, sight words, and more. The *System 44* Teaching Guide provides teachers with scaffolds to help students build metacognitive understanding of the English language through S.M.A.R.T.¹ lessons that present essential concepts, teach academic vocabulary, and build background for learning. Teachers can focus on vocabulary, sound articulation, and language transfer with differentiated resources provided in the program. The *44Book* provides students with written practice for all sound-spelling correspondence patterns in a sequential design, and with short fiction and nonfiction reading passages for practice, application, and reinforcement of skills.

¹ S.M.A.R.T. = Strategies for Metacognition, Academic Language, Reading, and Thinking

System 44 Technology is innovative foundational reading software that provides systematic, scientifically based instruction in the phonological, morphological, syntactical, and semantic structures of English. The adaptive technology helps students learn letter-sound relationships of the English language, as well as segmentation and blending. *System 44* Software also provides individualized practice in spelling and decoding and builds knowledge of syllable patterns, word structure, and morphemes. *System 44* Software provides multiple points of entry to allow students to work at the appropriate level based on their performance on the *Scholastic Phonics Inventory* (SPI), so they can rapidly progress toward reading proficiency.

The **System 44 Library and the Decodable Digest** provide students with opportunities to apply their decoding skills to motivating, relevant texts. The paperback library is a collection of high-interest, age-appropriate texts that target specific decoding skills and strategies and aid in building academic vocabulary. The accompanying audio-books present recordings that include a Reading Coach, who introduces each book, and a Narrator, who models fluent reading of the text. The *Decodable Digest* provides age appropriate and engaging decodable passages for fluency practice and includes a list of high-frequency words and sound-spelling correspondences.

READ 180

READ 180 is an intensive reading intervention program designed to meet the needs of students whose reading achievement is below the proficient level. The program directly addresses individual needs through adaptive and instructional software, high-interest literature, and direct instruction in reading and writing skills.

The **rBook Teaching System** is the cornerstone of *READ 180*. The *rBook* Teacher's Edition incorporates proven teaching routines that develop high-utility academic vocabulary, comprehension, and writing, and instructional content that engages students as they work alongside the teacher in the *rBook* Pupil's Edition. Designed to provide a clear instructional path for teachers to use in whole- and small-group direct instruction, the *rBook* Teacher's Edition provides direct teaching, teacher modeling, guided and independent practice and application, and opportunities for preteaching and reteaching. Best practices, structured engagement routines, and preteaching engage all students in concept-building, using academic language, and generating and sharing ideas. The instructional routines include the following:

- ❑ **Teaching Vocabulary**, a step-by-step way to make new academic words meaningful;
- ❑ **Oral Cloze**, a research-based technique for active and accountable shared reading;
- ❑ **Think (Write)-Pair-Share**, a strategy that encourages cognitive growth through social interaction and increases the quality of student responses by allowing time to digest a question or task and prepare a response;
- ❑ **Idea Wave**, a structured method for students to share ideas in response to a focused question or task before or after reading;
- ❑ **Numbered Heads**, a cooperative-learning routine that structures small groups for discussions or for tasks;
- ❑ **The Writing Process**, a series of steps that may be used in the course of developing a piece of writing;
- ❑ **Peer Feedback**, a writing revision strategy in which two students work together to evaluate the content and organization of their drafts and to offer suggestions for improvement.

READ 180 Technology is “intelligent software” that provides individualized practice for a range of learners, collecting data based on individual responses and adjusting instruction to meet each student’s needs at his or her level, accelerating his or her path to reading mastery. As students interact with the Software, they:

- ☐ Build background knowledge;
- ☐ Develop mental models that help to build comprehension;
- ☐ Develop, practice, and apply word recognition and reading fluency;
- ☐ Master key vocabulary;
- ☐ Practice and apply comprehension strategies;
- ☐ Develop, practice, and apply spelling; and Practice and apply proofreading skills.

READ 180 Direct Instruction. The *rBook* Teaching System, created by Dr. Kate Kinsella and Dr. Kevin Feldman, serves as the cornerstone of **READ 180** instruction. It incorporates proven teaching routines that develop high-utility academic vocabulary, comprehension, and writing, grounded in instructional content that engages students and prepares them to succeed in school, in the content areas—and in life. Designed to provide a clear instructional path for teachers for whole- and small-group direct instruction, the *rBook* Teacher’s Edition provides direct teaching, teacher modeling, guided and independent practice and application, as well as opportunities for preteaching and reteaching. Best practice, structured engagement routines, and preteaching involve all students in concept-building, using academic language, and generating and sharing ideas. Resources for Differentiated Instruction (RDI) Books 1, 2, and 3 are included to help differentiate small groups with reading, writing, and language support.

The **READ 180 Library** provides students with daily opportunities for modeled and independent reading, with high-quality fiction and nonfiction materials, in order to transfer and reinforce skills, develop reading fluency, and build reading stamina. Leveled libraries offer students age-appropriate, relevant books that they can read with success. Audiobooks give struggling readers the opportunity to hear good reading models while accessing authentic grade-level literature.

Endorsed by the Council of Administrators of Special Education

READ 180 has been the subject of over 20 years of continuous research and evaluation. Numerous studies reveal significant improvements in reading achievement for students receiving special services, including declassification from special education.

The Council of Administrators of Special Education (CASE) has recognized this rich base of research by formally endorsing **READ 180**. The CASE endorsement requires rigorous evidence of effectiveness with Special Education students, and indicates the organization’s belief that the program will be highly beneficial to its members. More information on **READ 180** effectiveness research is available in the Compendium of **READ 180** Research (Scholastic, 2008) or online at <http://teacher.scholastic.com/products/research/index.htm>.

SYSTEM 44 AND READ 180 INSTRUCTIONAL MODELS

System 44 is designed to be used as a stand-alone intervention or to fit into any intervention model, including the *READ 180* instructional model featured below. Program implementation can be flexibly adapted depending on the amount of time, number of students, and number of computers available. For best results, the *System 44* classroom should be organized to allow students to benefit from use of each of the following:

- ❑ **Instructional Software** that is adaptive and delivers research-based instruction and practice based on the proven FASTT (Fluency and Automaticity through Systematic Teaching with Technology) algorithm;
- ❑ **Small-Group Differentiated Instruction**, using the *System 44* Teaching Guide and *44Book*;
- ❑ **Modeled and Independent Reading**, using practice materials, including the *System 44* library, *Decodable Digest*, and *44Book* practice pages.

The *READ 180* instructional model is a research-based design for explicit, direct instruction and classroom organization for intensive intervention for struggling readers. As shown below, each day's session begins and ends with whole-group, teacher-directed instruction. In between, students break into three small groups for differentiated instruction that includes practice, reinforcement, and reteaching to build reading proficiency. This instructional model enables the acceleration of struggling readers toward grade-level reading proficiency through a proven balance of direct instruction, small-group differentiation, and individual practice.

The *READ 180* Instructional Model



Major Components of the System 44 and READ 180 Instructional Designs

	Whole Group	Small-Group Rotations		
	Whole-Group Instruction	Small Group Teacher-Led Instruction	Instructional Software	Modeled and Independent Reading
SYSTEM 44				
Instructional Component Purpose	Direct instruction to build community, review previous learning, and launch the day's instruction.	Direct skill and strategy instruction, differentiated to meet student needs based on progress-monitoring and SAM reports.	Individualized, leveled adaptive skills instruction and practice.	Guided practice in skills the student is learning through the use of software and teacher-led lessons.
Resources	✓ <i>System 44</i> Teaching Guide	✓ <i>System 44</i> Teaching Guide ✓ <i>44Book</i> ✓ Flip Chart ✓ Magnetic Tile manipulatives ✓ Sound and Articulation DVD	✓ <i>System 44</i> Software	✓ <i>Decodable Digest</i> ✓ <i>44Book</i> practice pages ✓ <i>System 44</i> Library and Audiobooks ✓ Teaching Resources
READ 180				
Instructional Component Purpose	Direct instruction before and after small-group rotations to launch and conclude the day's lesson.	Targeted and differentiated instruction in vocabulary, academic language, comprehension, writing, and grammar.	Individualized, leveled adaptive skills instruction and practice.	Modeled and independent reading and writing to build fluency and comprehension skills, as well as reading stamina.
Resources	✓ <i>rBook</i> Teacher's Edition ✓ <i>rBook</i> Anchor DVD	✓ <i>rBook</i> Teacher's Edition ✓ <i>rBook</i> ✓ Resources for Differentiated Instruction	✓ <i>READ 180</i> Topic Software ✓ Teaching Resources	✓ <i>READ 180</i> Paperbacks and Audiobooks ✓ Teaching Resources

SYSTEM 44 AND READ 180 IN A RESPONSE TO INTERVENTION APPROACH

System 44 and *READ 180* can help schools meet the needs of students in both general education and special education through a Response to Intervention (RTI) approach, which is a systematic framework for allocating instructional services and resources in response to students' individual needs. The purpose of RTI is to proactively identify students in need of special services to prevent long-term academic failure in both general education and special education settings. RTI empowers educators to continuously screen students' skills, identify achievement targets, collect data, monitor student progress, and calibrate instruction to match student needs. By revealing students' strengths and unveiling opportunities for improvement, RTI helps teachers harness resources more efficiently to ensure every student, regardless of ability, grows into a confident, capable, lifelong learner.

As illustrated in the figure below, an RTI framework employs a multitiered model of service delivery to promote efficient response to students' needs. Each tier provides increasingly intensive support structures to ensure that students succeed.



In **Tier 1**, students receive core instructional interventions that are preventive and proactive. These are designed to differentiate instruction so that the majority of the students will respond and achieve established benchmarks.

In **Tier 2**, students who lack fundamental skills their peers mastered in Tier 1 are provided with additional short-term, strategic supplemental classroom instruction in small groups. Students in Tier 2 typically receive intervention instruction in small groups, providing them with more intensive, targeted attention from the teacher.

In **Tier 3**, students who have not adequately responded to the instruction provided in Tiers 1 and 2 are offered higher intensity, accelerated intervention to quickly build mastery of entry level skills. The goal is to allow optimal access to a rigorous standards-based curriculum.

Both *System 44* and *READ 180* are scientifically validated, research-based interventions that are well-suited for Tier 1 or Tier 2 instruction, and can even be implemented as Tier 1 core instruction in settings where the majority of students are below grade level in reading achievement. *System 44* and *READ 180* also offer powerful tools for the systematic screening and progress monitoring that are central to an RTI approach, along with customizable training and professional development to ensure that teachers can use the program with a wide array of students, including special education students. Information on how *System 44* and *READ 180* fit within an RTI approach is included throughout this paper. For detailed descriptions of how *System 44* and *READ 180* align with a Response to Intervention framework, please see *Response to Intervention: An Alignment Guide for System 44* (Scholastic, 2009) and *Response to Intervention: An Alignment Guide for READ 180* (Scholastic, 2008).

A NOTE ABOUT STUDENTS WITH DYSLLEXIA

Dyslexia is a language-based disability that affects both oral and written language. It may also be referred to as a reading disability. The most common educational difficulties experienced by students with dyslexia are in the areas of decoding, spelling, communicating ideas through writing, and reading comprehension (Shaywitz, 2003). It is estimated that a full 80% of those with specific learning disabilities (or 4.6% of the total public school population) have a primary disability in reading. Furthermore, research suggests that another 15–20% of the total school population exhibits symptoms of dyslexia, such as difficulty with reading, writing, or spelling, even though they may not receive special education services (International Dyslexia Association, 2007; Shaywitz, 2003).

In identifying students with dyslexia, it is important to recognize that reading difficulties occur along a continuum, and even students with a formal diagnosis of dyslexia will vary in the type and severity of reading and language processing problems that they experience. Historically, diagnosing dyslexia involved administering a complete psycho-educational evaluation that included psychological, achievement, and language processing tests. Increasingly, schools are using Response to Intervention to identify students with dyslexia. In the RTI process, school personnel monitor students' responsiveness to tiers of intensive, targeted reading instruction. If the student does not meet performance benchmarks with the intervention, and other developmental disorders are ruled out, then the student may be identified as having a reading disability. Based on the diagnosis, teachers can then tailor the reading intervention to the student's particular instructional needs.

According to Shaywitz (2003), effective intervention programs for students with reading disabilities: 1) provide systematic, direct instruction in phonemic awareness and phonics; 2) teach students to apply these skills to reading and writing; 3) provide fluency training; and 4) include rich experiences listening to and using oral language. *System 44* and *READ 180* provide these essential elements to struggling readers. The *Scholastic Phonics Inventory* (SPI) and the *Scholastic Reading Inventory* (SRI) are used initially to diagnose students' specific areas of weakness and determine their appropriate placement in the programs. *System 44* offers the systematic, explicit instruction in sound-letter correspondence that many dyslexic students need. For students who are comfortable with decoding or who have responded well to a foundational reading intervention like *System 44*, *READ 180* provides structured, intensive training in comprehension and fluency, along with systematic skills practice. The next section provides further detail about how *System 44* and *READ 180* provide the research-based instruction that students with dyslexia need.

Of the 6.7 million students enrolled in special education programs, 41% have been identified as having a specific learning disability.

-Snyder, Dillow, & Hoffman, 2008

SPECIAL EDUCATION RESEARCH FOUNDATIONS FOR SYSTEM 44 AND READ 180

System 44 and *READ 180* are informed by an extensive body of literature about best practices for serving older struggling readers in general and those with special needs in particular. Although they differ in content, the two programs share three key components that allow them to efficiently provide research-based, targeted intervention for a wide range of learning styles and instructional needs. Each component, described below, includes elements that are proven effective for addressing special education needs.

1) **Research-Based Instruction** engages all students, scaffolds instruction to support comprehension, and allows for individual, small-group, and whole-group direct instruction in reading, through the following elements:

- ☐ Systematic, Explicit Instruction in Letter-Sound Correspondence
- ☐ Comprehension Support through Scaffolding and Gradual Release
- ☐ Universal Design for Learning
- ☐ Multisensory Learning Experiences
- ☐ Engaging and Motivating Features
- ☐ Building Background Knowledge and Mental Models through Anchored Instruction
- ☐ Leveled Text to Match Students' Needs
- ☐ Professional Development

2) **Innovative Technology** accommodates specific physical challenges, provides individualized instruction, and offers motivational support through the following features:

- ☐ Section 508 Compliance
- ☐ Adjustable Speed for Fluency and Comprehension Activities
- ☐ Immediate Corrective Feedback
- ☐ Closed Captioning and Alternate Color Scheme
- ☐ Adaptive Technology that Maximizes Memory and Learning

3) **Comprehensive Screening and Progress-Monitoring Assessments** allow educators to regularly screen students, monitor performance, identify areas of weakness, and tailor instruction to specific student needs, through the following elements:

- ☐ Screening and Placement Assessments
- ☐ Progress-Monitoring
- ☐ Data Management and Reporting

The following tables describe in detail how these features of *System 44* and *READ 180* instructional design, technology, and assessment reflect special education research and best practices.

Research-Based Instruction

A central tenet of the Response to Intervention model is that students should be provided with research-based, supportive instruction that allows them the maximum opportunity to succeed at the appropriate tier of instruction. The instructional designs of *READ 180* and *System 44* are grounded in research on the most effective ways to engage students and maximize their learning of new concepts and skills, helping to ensure that each student achieves at his or her maximum potential.



Systematic, Explicit Instruction in Letter-Sound Correspondence

RESEARCH BASE

- ◆ Phonemic awareness, decoding, and fluency are the critical foundations upon which all other reading skills are built (Adams, 1994, 2001; Moats, 2001; Stanovich, 1991). Students' knowledge of the correspondence between sounds and spellings determines their ability to read single words with speed and accuracy, which in turn predicts their ability to read and comprehend strings of text (Adams & Bruck, 1995; Scarborough, 2002; Wagner, 2008).
- ◆ "It is important for [people with dyslexia] to be taught by a systematic and explicit method that involves several senses (hearing, seeing, touching) at the same time. Many individuals with dyslexia need one-on-one help so that they can move forward at their own pace. In addition, students with dyslexia often need a great deal of structured practice and immediate, corrective feedback to develop automatic word recognition skills" (International Dyslexia Association, 2007).

SYSTEM 44

System 44 provides the explicit, systematic phonemic awareness and phonics instruction that many students with reading difficulties need as a foundation for higher level reading comprehension instruction. Multisensory phonemic awareness instruction is provided in the *System 44* Teaching Guide with the following research-based practices: rhyming and alliteration, oddity tasks, oral blending, oral segmentation, and phoneme manipulation. The *System 44* Software also systematically reinforces phonemic awareness skills in a one-on-one setting.

System 44 provides explicit phonics instruction through a scope and sequence that systematically integrates lessons on sounds and spellings with strategies for unlocking multisyllabic words. The program uses a metacognitive approach that helps older readers quickly "crack the code" of the English language. For example, teacher-led S.M.A.R.T. lessons build conceptual knowledge related to decoding by directly teaching foundational phonics principles and essential concepts. New skills are reinforced through daily visual, aural, and tactile experiences.

System 44's adaptive technology provides individualized training in letter-sound relationships that is skillfully organized according to the stability, frequency, and utility of sounds. As students begin mastering decoding skills, the *System 44* Software builds decoding automaticity by requiring students to demonstrate accuracy and speed with sound-letter correspondence before moving on to new material. Throughout, the technology provides immediate, correct, and patient feedback as students repeatedly practice new skills.

READ 180

In *READ 180* Software, extensive phonics instruction is provided through individualized, modeled practice in structural analysis and continued work on phoneme articulation, coupled with immediate, corrective feedback. Modeled examples of correct articulation of sounds are further presented in *READ 180* Audiobooks and during teacher-led instruction.

The Resources for Differentiated Instruction (RDI) Book 1 presents additional resources for providing differentiated, direct instruction in phonemic awareness, phonics, and syllabication. RDI Book 1 complements and supports the skill development presented in the *rBook*, Topic Software, and reading libraries with resources that include lessons, instructional routines, student practice pages, reading passages, graphic organizers, and classroom management materials for use as necessary to meet individual students' needs.



Comprehension Support through Scaffolding and Gradual Release

RESEARCH BASE

- ◆ Research shows that teachers can enhance students' comprehension of text by using techniques such as providing a gradual release of responsibility to the student and scaffolding instruction (Fisher & Frey, 2008).
- ◆ Gradual release helps students assimilate new strategies by giving them the time, opportunity, and support they need (Graves & Graves, 2003; Kelley and Clausen-Grace, 2008).
- ◆ Scaffolded instruction helps students internalize and transfer skills and strategies (Duke & Pearson, 2002).
- ◆ Scaffolded instruction helps older students with learning disabilities become independent learners (National Joint Committee on Learning Disabilities, 2008; Kame'enui, Carnine, Dixon, Simmons, & Coyne, 2002; Vaughn & Denton, 2008).

SYSTEM 44

The gradual release model, used throughout *System 44*, leads to ownership over learning as responsibility for performing a new skill is gradually transferred from teacher to student. For example, each teacher-directed lesson begins with explicit instruction and modeling, followed by gradual guidance of the students toward independent practice.

System 44 teacher-led lessons and software scaffold students in developing metacognitive understanding of the English language's finite system of 44 sounds and 26 letters. The *System 44* Teaching Guide assists teachers in scaffolding direct instruction for students during whole- and small-group lessons by providing preteaching and differentiated instruction resources for each lesson. *System 44* Software uses adaptive and audio technology to customize and scaffold individual skill practice. *System 44* also builds comprehension support into students' independent reading. Prompts to check for understanding are incorporated throughout *System 44* library books and the *Decodable Digest*. The books are highly illustrated to further support understanding.

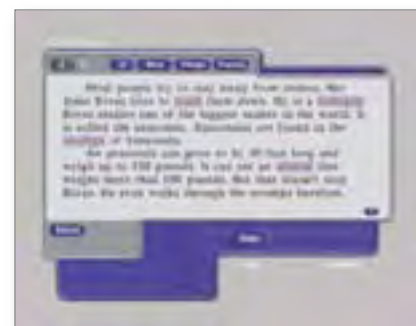


Comprehension Support in the *System 44* Decodable Digest

READ 180

A gradual release approach is used throughout the software and the *rBook*. For example, each *rBook* Workshop includes three readings, each of which is longer and more challenging than the preceding one. Support and scaffolding is heavier in the beginning of each workshop so students benefit from gradually gaining the ability to independently learn and practice reading and comprehension skills.

Throughout *READ 180*, graphic organizers and other supports are used to scaffold comprehension. For example, whole- and small-group teacher-led lessons provide direct instruction, modeling, and guided practice in comprehension skills and strategies as well as higher-order thinking skills. The graphic organizers that accompany the guided and independent reading help to scaffold students' understanding of the text. A Reading Coach on the *READ 180* Audiobooks models fluency, comprehension, vocabulary, and self-monitoring strategies at important points during reading. Students thus experience firsthand the strategies of a good reader throughout the supported reading of each grade- and age-appropriate book.



Comprehension Support in
READ 180 Software Passage



Universal Design for Learning

RESEARCH BASE

- ◆ Universal Design for Learning (UDL) is a set of principles that make learning universally accessible by creating flexible goals, methods, materials, and assessments to accommodate all learners' differences, including learning disabilities, physical challenges, and sensory impairment. Instructional materials designed with UDL principles increase student access to the curriculum by providing:
 - Multiple means of content representation, to provide students a variety of ways to learn;
 - Multiple means of expressing learned content, to offer students alternatives to show what they know;
 - Multiple means of engagement with content, to motivate and challenge students appropriately (Rose & Meyer, 2000).
- ◆ UDL improves access to and participation in the general education curriculum for all students, including those with learning disabilities (Hitchcock & Stahl, 2003; National Joint Committee on Learning Disabilities, 2008).

SYSTEM 44

- 1) Multiple Means of Representation. *System 44's* multisensory approach includes interactive software with digital, audio, and visual support. For example, a Mouth Position Video or Animation provides both visual and aural models of accurate phoneme articulation. Audiobooks, manipulatives, and teacher-led instruction offer additional opportunities to use visual, aural, kinesthetic, and tactile modalities to access lesson content.
- 2) Multiple Means of Expression. *System 44* includes both software- and paper-based assessments. During teacher-led lessons, students have opportunities to express themselves through writing and discussion in one-on-one, small-group, and whole-group settings. In the software, students can practice and demonstrate fluency by reading and recording software passages at the end of each software series.
- 3) Multiple Means of Engagement. Small-group, whole-group, and independent activities provide a variety of settings for students to engage with the curriculum. *System 44* Software activities encourage playing with sounds and symbols, and differentiate instruction to meet students' varied needs. Likewise, paperbacks of graduated lengths focus on subjects relevant to students' lives and interests.

READ 180

- 1) Multiple Means of Representation. *READ 180* is designed with a multisensory instructional approach. The software incorporates images, graphics, sounds, electronic text, and adaptive pacing to engage many different types of learners. The *rBook* and the independent reading libraries are designed around the principles of considerate, leveled text, with titles, introductory paragraphs, images, and captions throughout. Audiobooks, Anchor Videos, and teacher-directed lessons further offer students multiple means of accessing lesson content.
- 2) Multiple Means of Expression. *READ 180's* instructional routines ensure that students regularly express their learning in words and writing, in a structured, engaging way. In the software, students read and record text passages to practice and demonstrate fluency. All software, paperbacks, and Audiobooks include QuickWrites and graphic organizers to allow students to show comprehension in a way that suits their needs. Assessments in both software and print format offer multiple means for students to demonstrate their knowledge.
- 3) Multiple Means of Engagement. *READ 180* includes technology, small-group, whole-group, and independent activities to engage students in a variety of different ways. The technology is a motivating learning medium for students and includes a supportive on-screen host to help keep students engaged. In addition, the wide variety of age-appropriate, high-interest, leveled texts in *READ 180* appeal to learners with varying interests, backgrounds, and reading levels.



Multisensory Learning Experiences

RESEARCH BASE

- ◆ “Our senses evolved to work together—vision influencing hearing, for example, --which means that we learn best if we stimulate several senses at once” (Medina, 2008). Studies show that students involved in multisensory learning experiences achieved greater gains than did students taught with merely a visual or an auditory approach (Farkas, 2003; Maal, 2004). Similarly, training software with multisensory presentations helped students improve word writing skills, with strong transfer from trained to nontrained words (Kast, Meyer, Vögeli, Gross, & Jäncke, 2007).
- ◆ The Center for Applied Special Technology (CAST) has identified “multiple means of representation,” or giving students a variety of ways to learn, as one of the central facets of a curriculum designed to support all learners (Rose & Meyer, 2000).
- ◆ Research shows that guided practice with recognizing and generating sounds, accompanied by a speaker’s face that models articulation, can help hearing-challenged and autistic students perceive and generate the sounds of English (Bosseler & Massaro, 2003).

SYSTEM 44

System 44’s multisensory instructional approach provides students with daily opportunities to view, listen, speak, record, and write. *System 44* instruction includes videos, images and graphics, sounds, Audiobooks, several different types of print components, and manipulatives. Through learning activities that combine two or more sensory modalities simultaneously—such as the Sound and Articulation DVD that shows visual and aural models of accurate phoneme articulation—*System 44* provides multiple entry points for all learners to access and learn the content.



System 44 Word Building Kit

READ 180

READ 180 offers a multisensory instructional approach that combines video, software, Audiobooks, teacher-led lessons, and printed text in every classroom session. *READ 180* content consistently presents images, graphics, and sound alongside printed and electronic text, providing daily opportunities for different types of learners to engage their visual, auditory, and tactile senses.



One Giant Leap Anchor Video in
READ 180 Software



Engaging and Motivating Features

RESEARCH BASE

- ◆ Research has demonstrated that motivation is a strong predictor of reading comprehension in students with learning disabilities (Heo, 2007; Sideridis, Mouzaki, Simos, & Protopapas, 2006).
- ◆ Students gain motivation and confidence from experiencing academic success daily (Pressley, Gaskins, Solic, & Collins, 2006). Students' motivation and engagement are also enhanced when they set their own goals for learning (Ames, 1992; Boardman et al., 2008; Guthrie & Humenick, 2004) and track their own progress, so that they have a sense of ownership over their own academic growth (Hupert, & Heinze, 2006).
- ◆ Using technology such as computers has been found to be motivating to students (Hall, Hughes, & Filbert, 2000). Furthermore, the opportunity for students to control technology such as video, and to select video scenes they need, can positively impact students' motivation (Anderson-Inman & Horney, 2007; Hasselbring, Lewis, & Bausch, 2005; Heo, 2007).

SYSTEM 44

System 44 has been designed to draw students into reading and increase their intrinsic motivation to read. The *System 44* scope and sequence is designed so that students can quickly put new skills to use and begin successfully reading decodable text independently. *System 44* library books, text passages, and videos are high-interest, age-appropriate, and relevant to students' lives. All library books help students set a purpose for reading, making the reading activity more meaningful. Throughout, reading materials are carefully matched to students' current reading levels as they progress through the program, ensuring that they experience success while being appropriately challenged.

The adaptive technology maximizes students' experience of success through lessons tailored to their skill level. On-screen mentors sustain the learner's engagement and interest by scaffolding, encouraging, and reinforcing his or her efforts. The endless patience of the computer cannot be overemphasized as students repeatedly rehearse new skills.

System 44 provides multiple opportunities for students to take ownership over their learning by setting goals and monitoring their mastery of lesson content. Students move through the Software lessons at their own pace. They can access on-screen charts and printed reports to track their progress toward their goals.

READ 180

READ 180 deliberately builds student confidence and motivation by enabling all students to experience success with reading throughout all the program's components.

READ 180's adaptive technology provides customized content that allows students to experience success reading at their individual level. In the software, students are motivated by the on-screen host, Ty, who encourages students when they make a mistake and congratulates them when they succeed. Feedback is private and respectful to the student.

READ 180 videos emphasize content-area-based topics designed to motivate students. Topics range from history mysteries and extreme sports to weird science.

The *rBook* has high-interest, leveled, age-appropriate reading selections that include both fiction and nonfiction content, linked with teaching strategies in the Teacher's Edition that engage and motivate struggling readers.

The program is designed to involve students in monitoring their own progress toward clearly defined goals. The *READ 180* Software gives students control over how fast or slowly they proceed through the systematic, scaffolded lessons. As the technology tracks individual student progress, students are able to view their progress on on-screen charts and printed reports, making success a visible and measurable experience.



Building Background Knowledge and Mental Models through Anchored Instruction

RESEARCH BASE

- ◆ Background, or prior, knowledge is one of the critical factors underlying reading proficiency (Torgesen et al., 2007). People construct new knowledge and understandings based on their existing knowledge (Bransford, Brown, & Cocking, 2003).
- ◆ Anchored instruction provides a situation or realistic context that allows students to solve problems by using prior knowledge or applying newly-learned skills and concepts (Moore, Rieth, & Ebeling, 1993). It has also been found to be highly motivating to students (Brown, Collins, & Duguid, 1989).
- ◆ Research demonstrates that dynamic images and sound are especially helpful for students with learning disabilities and other students with limited background knowledge (Hasselbring, & Glaser, 2000). “Video provides learning disabled students with an authentic base of experience in abstract domains. Multiple representations of video information make abstract information more concrete to these students” (Heo, 2007).
- ◆ In most studies, video or videodisc-based anchored instruction has shown a positive impact on learning that is superior to that of alternative forms of instruction. Videodisc was shown to contextualize expository text and result in better comprehension of the text (Rose, Hasselbring, Stahl, & Zabala, 2005; Strangman, Hall, & Meyer, 2003).

SYSTEM 44

In the *System 44* Software, direct instruction videos use images and animation to help students grasp new concepts and word meaning. Target words in the software are presented along with audio, images or video, and context sentences to help students access meaning.

The *System 44* Teaching Guide includes a vocabulary instruction routine that teaches students to connect the words used in phonics instruction to meaning.



System 44 Target Word With Video

READ 180

All *READ 180* instruction in reading comprehension, decoding, word recognition, spelling, and fluency is “anchored” by a motivating video. These Anchor Videos are used in both software and teacher-led instruction to help students build background knowledge and academic vocabulary and develop a mental model before reading. This anchored instruction helps increase students’ comprehension of texts; when they read passages related to the Anchor Videos they then have the background information necessary to understand the text and create a “mental picture.”

The *rBook* Teacher’s Edition also includes lessons for building background knowledge before students read text passages or Independent Reading books—for example by asking student pairs to generate how, what, or why questions that they expect the text to answer.

In addition, the Resources for Differentiated Instruction, Book 3, helps increase background knowledge and promote mental model development. Each lesson provides teachers with tips and information to build background knowledge during whole-group rotations.



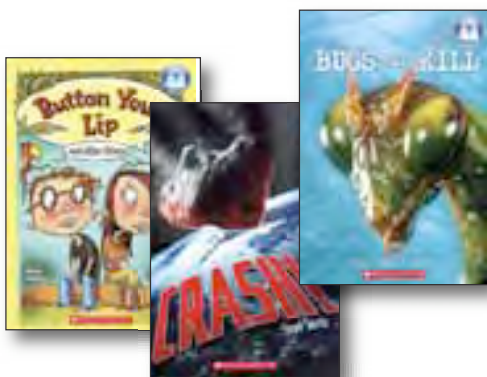
Leveled Text to Match Students' Needs

RESEARCH BASE

- ◆ Controlled text is text that specifically targets a student's reading level. The text contains only vocabulary words and phonetic elements that are appropriate for a student's stage in reading development. In addition, the length of the passage is controlled.
- ◆ Research shows that successful interventions for older students with special needs match students with reading materials at the appropriate level of difficulty (Vaughn and Denton, 2008). When students are matched with materials above their level, it is difficult for them to make maximum progress (Hiebert, 2005; Shanahan, 2008).
- ◆ In a special education teaching situation, especially one meant to evaluate responsiveness to instruction, the text must be better matched to student needs than it is in the typical classroom (Shanahan, 2008).

SYSTEM 44

In *System 44*, text throughout the software and *Decodable Digest* is 75–100% decodable, meaning that 75–100% of the sound-spellings in the words used have been explicitly taught to students. This carefully controlled text helps students apply and practice what they know and experience success with reading. In addition, books in the *System 44* libraries are leveled using the Lexile Framework.



System 44 Paperbacks

READ 180

READ 180 uses the Lexile Framework to determine both the student reading level and the difficulty of texts. All independent reading books and software passages are assigned Lexile scores based on their level of difficulty. Thus, students are consistently matched to high-interest text appropriate for their particular reading level, thereby promoting fluency and preventing frustration.

Furthermore, the adaptive technology in *READ 180* customizes instruction and practice according to students' Lexile levels, providing continual opportunities for all students, including those with special needs, to experience success and demonstrate progress.



READ 180 Paperbacks



Professional Development

RESEARCH BASE

- ◆ Professional development is pivotal for creating informed learning environments for older students with learning disabilities, for providing quality instruction, and for developing the expertise that schools need. “Special educators responsible for assessment, diagnosis, or delivery of remediation require a thorough understanding of language, reading, and writing development and disabilities as well as evidence-based instructional practices” (National Joint Committee on Learning Disabilities, 2008).
- ◆ Ongoing professional development is central to an effective RTI approach. “Because RTI is a schoolwide effort to refocus attention from identifying deficiencies in students to identifying scientifically based instructional practices that support the learning of all students, it is essential that all professionals receive ongoing professional development” (Duffy, 2008).

SYSTEM 44

READ 180

The *System 44* Teaching Guide and the *READ 180 rBook* Teacher’s Edition provide teaching support through integrated, point-of-use professional development. Teachers can refer to the professional development pages in the TG or TE for information on best practices, SAM reports that help guide instruction, classroom management strategies, background on the research underlying the programs, and step-by-step procedures for instructional routines. The planning guides, instructional overviews, and lesson plans in the *READ 180* Teacher’s Edition and the *System 44* Teaching Guide provide direction to teachers for what and when to teach—as well as suggestions for differentiating, preteaching, reteaching, extension, and providing reinforcement. For *READ 180* teachers, additional professional development pages about differentiating instruction to meet specific student needs are included in the three Resources for Differentiated Instruction books. *System 44* teachers can gain additional information about using the program with students who have special needs in a specially dedicated section in the *System 44* Teaching Guide.

Teacher in-services and resources further support teachers in tailoring instruction for diagnosed needs and metacognitive learning, and in creating learning environments for multiple purposes, including acceleration, improvement, or reinforcement.

In addition, *READ 180* offers a comprehensive in-service program as well as opportunities for ongoing professional development such as Scholastic RED—a multiple-session course offered both online and in-person—which is customizable to meet the needs of each district. Scholastic RED’s courses and workshops include strategies for differentiated instruction to maximize learning for all students.

Innovative Technology

Educational software can be an important asset in special education, because it has the unique capacity to deliver individualized instruction, practice, and reinforcement. Research shows that instruction that takes advantage of the capabilities of technology can raise student achievement, motivation, and engagement (Hasselbring & Goin, 2004; MacArthur et al., 2001). The adaptive technology in *READ 180* and *System 44* is ideal for serving students with special needs, because it adjusts to each student's particular learning needs, breaks down tasks into steps, and provides immediate, individualized corrective feedback. Within a Response to Intervention model, *READ 180* and *System 44* software can be used to meet individual needs at the appropriate level of instruction, without implementing separate or complex adaptations. As a result, students with special needs are not singled out or inconvenienced because of their disabilities.



Section 508 Compliance

RESEARCH BASE

- ◆ Section 508 of the Vocational Rehabilitation Act governs technology access for individuals with disabilities. The law requires that all students have equivalent or alternative access to key educational objectives. When technology is 508 compliant, students with disabilities can better benefit from instruction in the general education setting (Hitchcock & Stahl, 2003).

SYSTEM 44

System 44 addresses all twelve Section 508 accessibility requirements. *System 44* addresses these requirements through direct program accessibility features in the software—e.g., closed captioning and alternate color scheme—and through compatibility with third party assistive devices and alternative input devices. *System 44* was developed with the intent to give students with visual, hearing and/or physical disabilities access to the same mainstream learning materials that nonimpaired students use.



Students Using Scholastic Software

READ 180

READ 180 addresses all 12 Section 508 accessibility requirements. *READ 180* addresses these requirements through direct program accessibility features in the software—e.g., keyboard shortcuts, mouseover and voice over features, closed captioning, and alternate color scheme—and through compatibility with third party assistive devices and alternative input devices. *READ 180* was developed with the intent to give students with visual, hearing and/or physical disabilities access to the same mainstream learning materials that nonimpaired students use.



Adjustable Speed for Fluency and Comprehension Activities

RESEARCH BASE

- ◆ By giving students control of the screen and their progress, self-directed technology creates a sense of engagement and independence (Hasselbring, Lewis, & Bausch, 2005).

SYSTEM 44

System 44 Software offers students the option to watch background videos again or reread passages for more support. Students can adjust the pace of reading for passages that are read aloud in the Success strand.

READ 180

READ 180 Software offers students the option to watch background videos again or reread passages for more support. *READ 180* Software allows students to vary the reading pace, by setting the speed for Word-by-Word, Phrase-by-Phrase, and Practice reading modes in the Reading Zone. The setting ranges from 1 (slowest) to 5 (fastest). Students can also select decoding hints for words and receive support in five languages.



Immediate Corrective Feedback

RESEARCH BASE

- ◆ Successful interventions with secondary students with special needs provide immediate corrective feedback (Vaughn & Roberts, 2007). Immediate, computer-assisted corrective feedback accompanied by answer-until-correct procedures (Epstein, Cook, and Dihoff, 2005) or more practice (Hall, Hughes, & Filbert, 2000) have been found to be effective with special needs students.
- ◆ In addition, immediate corrective feedback has been found to improve the motivation of mentally delayed adolescents (Hall, Hughes, & Filbert, 2000; Distel, 2001).

SYSTEM 44

READ 180

READ 180 and *System 44* software provide immediate corrective feedback in all activities. For example, when students spell a word incorrectly on the software, they receive immediate corrective feedback customized to the specific error. The feedback is accompanied by modeling and guided practice. Students are first explicitly shown their errors, then they see a model of the correct spelling, and finally they practice the correct spelling.



System 44 Spelling Check-Up



Closed Captioning and Alternate Color Scheme

RESEARCH BASE

- ◆ Research has demonstrated that captioned video and television programs can help deaf students improve their motivation, vocabulary, and reading comprehension (Jackson, 2003; Kalyanpur & Kirmani, 2005). It further deepens understanding of what is taught in the classroom (Hasselbring & Glaser, 2000).
- ◆ When using a computer program that provided captioning, among other technology supports, older students who were deaf and hard of hearing made substantial gains in recognition and understanding of tested vocabulary (Loeterman, et al., 2002).
- ◆ Adjusting the font, size, and color of the text can help address the needs of students with visual impairment (Hasselbring & Glaser, 2000).

SYSTEM 44

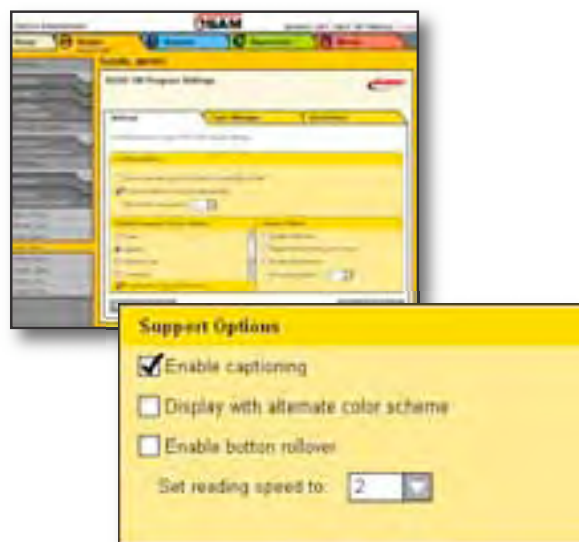
The teacher may activate captioning for *System 44* Software videos to allow students to read the narration of the videos.

System 44 Software is designed so that foreground and background color combinations can be viewed as black and white. Many program features for navigation and corrective feedback include visual as well as audio indicators.

READ 180

Captioning can be activated in the *READ 180* Software anchor videos so that students may read the narration of the videos and the host's feedback.

The button rollover feature provides a text label as well as an audio prompt for the software buttons in *READ 180*. The label appears when the student moves the cursor over the button. In addition, teachers may change the text screen from dark text on a light background to light text on a dark background for students with vision impairment.



READ 180 Program Support Options



Adaptive Technology That Maximizes Memory and Learning

RESEARCH BASE

- ◆ For students with special needs, targeted instruction in phonemic awareness, phonics, oral reading fluency, reading comprehension, or vocabulary can improve reading achievement, both in the targeted skill and in more generalized measures of literacy (Shanahan, 2008; Vaughn & Denton, 2008).
- ◆ Computer-assisted instruction is an attractive and engaging learning medium for students (Distel, 2001). Studies have found that students frequently ask to use computer-assisted programs (Hitchcock & Noonan, 2000), and that students remain on task for longer periods when they are able to control the activities on the screen (Distel, 2001; Hitchcock & Noonan, 2000). Research shows that computer-based instruction has a positive impact on student achievement (Lou, Abrami, & d'Apollonia, 2001).
- ◆ Technology that affords students the opportunity to practice new skills systematically, with information presented in manageable sets, fosters automaticity (Hasselbring & Goin, 2004).

SYSTEM 44

READ 180

System 44 and *READ 180* Software use adaptive technology to customize and scaffold individual skill practice and application in phoneme manipulation, word recognition, vocabulary, spelling, comprehension, and fluency. Throughout each program, the software offers consistent and targeted support with nonjudgmental and individualized coaching.

Through the FASTT (Fluency and Automaticity through Systematic Teaching with Technology) model that underlies *System 44* and *READ 180* Software, *System 44* and *READ 180* incorporate the fundamental principles of working and long-term memory, including protocols to enhance the learning, storage, and retrieval of new material. The adaptive pacing of skills practice in the FASTT model efficiently helps students achieve automaticity.

In both programs, embedded assessments throughout the software are designed to continuously assess and place students according to their level of mastery of learned and new information, and to customize corrective feedback to students' specific errors. Two distinct tracks in the *System 44* Software—Standard and Fast-Track—further individualize instruction by allowing students to skip content for which they already show mastery and focus more closely on their specific areas of need.



Individualized Instruction in *System 44* Software

Comprehensive Assessment to Drive Instruction

Universal screening and ongoing assessment are cornerstones of a Response to Intervention approach. All students should be screened three times a year to identify those students who are not making expected academic progress. In addition, the progress of students receiving interventions must be monitored consistently to determine if the interventions are producing the desired academic goals. Teachers can use the progress-monitoring information to adjust instruction or to move the student to a more intensive tier of intervention if necessary. *READ 180* and *System 44* include scientifically based and validated screening measures to help educators diagnose students' needs and ensure that they are properly placed in an appropriate level of intervention. Furthermore, the adaptive technology provides teachers with a powerful tool for progress monitoring as it continuously collects data on students' growth and mastery of new skills.



Screening and Placement Assessments

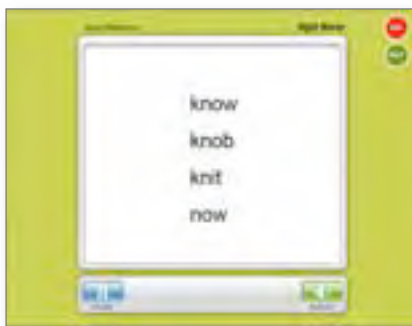
RESEARCH BASE

- ◆ Data from assessment of adolescents with possible learning disabilities should provide a clear profile of students' strengths, weaknesses, and literacy needs, and should result in prescriptions for specific targeted instruction (National Joint Committee on Learning Disabilities, June 2008; Vaughn & Denton, 2008).

SYSTEM 44

The *Scholastic Phonics Inventory* (SPI), a scientifically based and validated diagnostic screening assessment, is used to determine if a student needs further development of decoding skills before entering an intervention program such as *READ 180*. The SPI identifies students in need of foundational reading instruction, and identifies an appropriate point of entry for those students within the continuum of decoding instruction.

The Scholastic Achievement Manager (SAM) provides data-based reports, resources, and all the tools for administering *System 44*. SAM reports can be used to diagnose and remediate discrete skills. For example, the SPI Screening and Placement Report can be used for the student's IEP to identify the skills the student needs to master first.



Scholastic Phonics Inventory (SPI)

READ 180

The *Scholastic Reading Inventory* (SRI), a scientifically based and validated test, uses reading passages and accompanying questions to determine a student's Lexile score or reading level. SRI results are used to match student to appropriate text and place them at the correct level in the technology.

The Scholastic Achievement Manager (SAM) provides data-based reports, resources, and all the tools for administering *READ 180*. SAM reports can be used to diagnose and remediate discrete skills. For example, the SRI Student Action Report can be used to identify the student's reading level in order to match them with appropriate texts and set instructional goals.

SRI Intervention Grouping Report



Progress-Monitoring

RESEARCH BASE

- ◆ Ongoing assessment and progress-monitoring are vital to documenting student growth and informing instruction (Fisher & Ivey, 2006; National Joint Committee on Learning Disabilities, 2008; Stecker, Fuchs, & Fuchs, 2005; Torgesen, 2002) and is of particular importance with special needs students (National Joint Committee on Learning Disabilities, 2008; Vaughn & Denton, 2008).
- ◆ Close progress monitoring such as RTI requires can potentially result in fewer students incorrectly identified as having learning disabilities when they may be struggling due to other reasons (Cortiella, 2005; Duffy, 2008). Therefore, “progress monitoring (PM) is a vital aspect of the RTI model” (Fuchs & Fuchs, 2007).

SYSTEM 44

System 44 provides continual progress monitoring and data reporting (via software and print) to inform instruction and monitor progress toward IEP goals and objectives. The software automatically and continuously collects data on student performance. As students complete a cycle of instruction, the software measures a student's mastery and either promotes the student to the next instructional topic, or guides the student through additional instruction and practice with fresh content. The data on student performance is fed automatically into the Scholastic Achievement Manager (SAM), where it can be viewed by teachers and students to keep track of students' growth and adjust instruction accordingly.

Scholastic Phonics Inventory Progress-Monitoring assessments, designed to be administered three times during the school year, provide an additional tool for measuring and monitoring students' growth.

System 44 also includes interactive quizzes to help hold students accountable for independent reading and keep track of their progress through the paperbacks in the *System 44* library.

The *System 44 Scholastic Reading Counts!* (SRC!) quizzes measure whether or not students have read and understood each book.



System 44 Response to Intervention Report

READ 180

READ 180 provides a variety of curriculum-embedded, criterion-referenced progress monitoring assessments, including passages for oral fluency assessment and *rSkills Tests*, to regularly track student progress. The *rSkills Tests* are taken after every other *rBook* Workshop and assess students' mastery of comprehension and writing skills taught during whole- and small-group. These assessments can be used by teachers to inform individual and whole-group instruction.

In the Software, continuous targeted diagnostic assessments check for mastery of skills and identify individual instructional needs. Results of these ongoing assessments can be viewed by teachers and administrators through the Scholastic Achievement Manager, which also offers resources for differentiating instruction based on the reports.

READ 180 also includes *Scholastic Reading Counts!* (SRC!) quizzes to help hold students accountable for the independent reading rotation and keep track of their progress through *READ 180* library of paperbacks and audiobooks. SRC! quizzes measure whether or not students have read and understood each book.



Data Management and Reporting

RESEARCH BASE

- ◆ For all students, collecting data on student progress to drive instruction is vital to documenting student growth and determining the need for modifying instruction (Stecker, Fuchs, & Fuchs, 2005).
- ◆ For special needs students, it is important to use student performance assessment data to monitor progress and determine continuing instructional/remedial needs, and for information about students' strengths and weaknesses that can drive instructional planning (National Joint Committee on Learning Disabilities, 2008).
- ◆ In an RTI program, streamlining the regular collection and examination of data, as well as modifying instruction based on what is learned from student data, can benefit all students and can be a powerful tool to help make a teacher's job more efficient rather than more difficult (Duffy, 2008).

SYSTEM 44

SAM, the Scholastic Achievement Manager, is the dashboard for supporting data-driven instruction, AYP accountability requirements, and district-wide data aggregation for teachers, administrators, and technologists. SAM Reports, such as the examples described below, provide detailed diagnostic data to help teachers understand individual needs, group students, target key skills, monitor growth, and compare progress with peers. Teachers can also use SAM to link directly from reports to standards-aligned resources for differentiating instruction. The following are examples of *System 44* reports available through SAM.

- ◆ The Differentiated Instruction Grouping Report can be used to group students who are moving at the same pace on the software for teacher-led instruction. It also helps teachers to review and revise student goals and regroup instruction as necessary.
- ◆ The Response to Intervention Report provides information to help teachers determine if *System 44* is effective with students and compare their progress with that of peers.
- ◆ The Screening and Placement Report can be used with students to determine initial placement and identify attainable goals at the beginning of *System 44*.
- ◆ The Reading Progress Report helps teachers identify students who are not meeting usage or cumulative performance expectations.
- ◆ The Family Report makes it simple for teachers to communicate information about student progress to families and caregivers. This report can be provided at each grading period or as outlined in the IEP.

READ 180

SAM, the Scholastic Achievement Manager, is the dashboard for supporting data-driven instruction, AYP accountability requirements, and district-wide data aggregation for teachers, administrators, and technologists. SAM Reports, such as the examples described below, provide detailed diagnostic data to help teachers understand individual needs, group students, target key skills, monitor growth, and compare progress with peers. Teachers can also use SAM to link directly from reports to standards-aligned resources for differentiating instruction. The following are examples of *READ 180* reports available through SAM.

- ◆ The Student Diagnostic Report shows a student's skills progress, recent word and spelling errors, and fluency scores to help teachers identify successes and prioritize individual students' needs.
- ◆ The Student Reading Report can be used to track individual students' progress on the *READ 180* Software and their independent reading progress based on their *Scholastic Reading Counts!* quizzes.
- ◆ The Comprehension Skills Report identifies students who are struggling with specific comprehension skills, and the Comprehension Skills Grouping Report lists these students in groups according to their specific skill needs to assist teachers with differentiating instruction.
- ◆ The Reading Progress Report helps teachers identify students who are not meeting usage or cumulative performance expectations.
- ◆ The Parent Report gives parents or guardians an update on the student's performance in *READ 180*, and can be used to help inform caregivers of students' progress toward IEP goals.

SUMMARY

System 44 and *READ 180* offer effective solutions to older students in special education who struggle with foundational reading skills or with fluency and reading comprehension. Each comprehensive program provides direct, systematic instruction through adaptive technology, individualized instruction, and high-interest materials, all of which support and engage students. The programs also offer motivational support that is truly effective in improving student confidence and attitudes toward reading and school.

For schools seeking to systematically respond to students' needs through a Response to Intervention approach, *System 44* and *READ 180* add up to a suite of tools for supporting and managing RTI. Each program includes the following core features that facilitate the successful implementation of an RTI model:

- ❑ A research-based instructional design that is easily differentiated to meet students' needs, engages and motivates struggling students, and can be used to provide different tiers of intervention;
- ❑ Adaptive technology that helps to maximize each student's chances of success at the appropriate level of intervention through individualized instruction, immediate and nonjudgmental corrective feedback, and motivational support;
- ❑ A comprehensive package of assessment and progress-monitoring tools that provide teachers with screening and placement information and ongoing data on students' growth to inform instruction.

Ultimately, the goal of RTI is to ensure that all students receive instruction that effectively merges support, challenge, and responsiveness so that they can achieve at their maximum potential. With *System 44* and *READ 180*, Scholastic has combined research and best practices to create effective interventions that help students with a multitude of learning abilities and challenges achieve accelerated results, and enjoy academic success.

REFERENCES

- Adams, M.J. (1994). *Beginning to read*. Cambridge, MA: MIT Press.
- Adams, M.J. (2001). Alphabetic anxiety and explicit, systematic phonics instruction. In S. B. Neuman and D. Dickenson (Eds.), *Handbook on research in early literacy* (pp. 66-80). New York: Guilford Press.
- Adams, M.J. & Bruck, M. (1995). Resolving the "Great Debate." *American Educator*, 19(2), 7-20.
Cited in I. L Beck. (2006). *Making sense of phonics: The hows and whys*. New York: Guilford Press.
- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, 84, 261-271.
- Anderson-Inman, L. & Horney, M. (2007). Supported eText: Assistive technology through text transformations. *Reading Research Quarterly*, 42(1), 153-160.
- Biancarosa, G., & Snow, C.E. (2004). *Reading next—A vision for action and research in middle and high school literacy: A report from Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education.
- Boardman, A. G., Roberts, G., Vaughn, S., Wexler, J., Murray, C.S., & Kosanovich, M. (2008). Effective instruction for adolescent struggling readers: A practice brief. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Bosseler, A., & Massaro, D. W. (2003). Development and evaluation of a computer-animated tutor for vocabulary and language learning in children with autism. *Journal of Autism and Developmental Disorders*, 33(6), 653.
- Boulware-Gooden, R., Carreker, S., Thornhill, A., & Joshi, R. (2007). Instruction of metacognitive strategies enhances reading comprehension and vocabulary achievement of third-grade students. *The Reading Teacher*, 61(1), 70-77.
- Bransford, J., Brown, A., & Cocking, R. (2003). How people learn: Brain, Mind, Experience, and School. Expanded version. National Academy Press: Washington, DC. Retrieved April 15, 2008 from <http://siona.udea.edu.co/~jfdutim/curriculo/doc/How%20people%20learn.pdf>
- Brown, J.S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18 (1), 32-42.

- Cortiella, C. (2005). A parent's guide to response-to-intervention [Parent Advocacy Brief]. New York, NY: National Center for Learning Disabilities. Retrieved October 30, 2008, from http://www.nclld.org/images/stories/downloads/parent_center/rti_final.pdf
- Distel, R.F. (2001). Evaluation Series LS Class, - netschools.net. PLATO Learning, Inc. South Bloomington. Retrieved October 11, 2008, from <http://www.netschools.net/media/Evaluation%20Studies/E/Eastern%20High%20School.pdf>
- Duffy, H. (2008). Meeting the needs of significantly struggling learners in high school: A look at approaches to tiered intervention. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Duke, N. & Pearson, D. (2002). Effective practices for developing reading comprehension. In A. Farstrup & S. Samuels (Eds.), *What Research Has to Say About Reading Instruction* (pp. 205-242). Newark, Delaware: International Reading Association.
- Ecalte, J., Magnan, A., Bouchafa, H., & Gombert, J.E. (2008, July 21). Computer-based training with orthophonological units in dyslexic children: New investigations. *Dyslexia* [published online]. Retrieved March 10, 2009 from <http://www3.interscience.wiley.com/journal/120840723/abstract>.
- Elbro, C., & Petersen, D. (2004). Long-term effects of phoneme awareness and letter sound training: An intervention study with children at-risk for dyslexia. *Journal of Educational Psychology*, 96(4), 660-670.
- Epstein, G., Cook, J., & Dihoff, R.E. (2005). Efficacy of error for the correction of initially incorrect assumptions and of feedback for the affirmation of correct responding: Learning in the classroom. *The Psychological Record*, 55(3), 401-418.
- Farkas, R.D. (2003). Effects of traditional versus learning-styles instructional methods on middle school students. *Journal of Education Research*, 97(1), 42-51.
- Fisher, D., & Frey, N. (2008). *Better learning through structured teaching: A framework for the gradual release of responsibility*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Fisher, D. & Ivey, G. (2006). Evaluating the interventions for struggling adolescent readers. *Journal of Adolescent & Adult Literacy*, 50, 3, 180-189.
- Graves, M.F., & Graves, B.B. (2003). Scaffolding reading experience: Design for student success. (2nd ed.). Norwood, MA: Christopher Gordon.

Guthrie, J.T., & Humenick, N. M. (2004). Motivating students to read: Evidence for classroom practices that increase reading motivation and achievement. In P. McCardle & V. Chhabra (Eds.), *The voice of evidence in reading research* (pp. 329–354). Baltimore: Brookes.

Hall, T.E., Hughes, C.A., & Filbert, M. (2000) Computer assisted instruction in reading for students with learning disabilities: A research synthesis. *Education and Treatment of Children*, 23(2), 173-193.

Hasselbring, T.S. (2005). *Enhancing comprehension through the development of accurate mental models*. 49th Annual International Reading Association Convention, Reno, NV.

Hasselbring, T.S., & Goin, L. (2004). Literacy instruction for older struggling readers: What is the role of technology? *Reading and Writing Quarterly*, 20(2), 123–144.

Hasselbring, T. S., & Glaser, C. (2000). Use of computer technology to help students with special needs. *Future of Children: Children and Computer Technology*, 10(2), 102–122.

Hasselbring, T. S., Lewis, P., & Bausch, M. E. (2005). Assessing students with disabilities: Moving assessment forward through universal design. *InSight*, 5, 1–15.

Hiebert, E.H. (2005). The effects of text difficulty on second graders' fluency development. *Reading Psychology*, 26(2), 183–209.

Heo, Y. (2007). The impact of multimedia anchored instruction on the motivation to learn of students with and without learning disabilities placed in inclusive middle school language arts classes (Doctoral dissertation, University of Texas, 2007). Dissertations Abstracts International , 6812A, 5031. Retrieved October 10, 2008, from <https://www.lib.utexas.edu/etd/d/2007/heoy96433/heoy96433.pdf>.

Hitchcock, C.H., & Noonan, M.J. (2000) Computer-assisted instruction of early academic skills. *Topics in Early Childhood Special Education*, 20(3), 145-158.

Hitchcock, C., & Stahl, S. (2003). Assistive technology, universal design, universal design for learning: Improved learning opportunities. *Journal of Special Education Technology*, 18(4). Retrieved October 10, 2008, from <http://jset.unlv.edu/18.4/hitchcock/first.html>.

Hock, M.F., Brasseur, I.F., Deshler, D.D., Catts, H.W., Marques, J., Mark, C.A., & Wu Stribling, J. (in press). What is the nature of struggling adolescent readers in urban high schools? *Learning Disability Quarterly*.

- Hock, M.F., Deshler, D.D., Marquis, J., & Brasseur, I. (2005). Reading component skills of adolescents attending urban schools. Lawrence: University of Kansas Center for Research on Learning.
- Hupert, N. & Heinze, J. (2006). Results in the palms of their hands: Using handheld computers for data-driven decision making in the classroom. In M. van 't Hooft & K. Swan (Eds.), *Ubiquitous Computing in Education: Invisible Technology, Visible Impact* (pp. 211–229). Mahwah, NJ: Lawrence Erlbaum Associates.
- International Dyslexia Association. (2007). Dyslexia basics. International Dyslexia Association Website. Retrieved February 25, 2009 from <http://www.interdys.org/FactSheetsDyslexiaBasicsPrototype.htm>.
- Jackson, V. L. (2003). *Technology and special education: Bridging the most recent digital divide*. ERIC Document Reproduction Service No. ED 479685 Retrieved October 25, 2008, from http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1b/4f/f0.pdf.
- Kalyanpur, M., & Kirmani, M. (2005). Diversity and technology: Classroom implications of the digital divide. *Journal of Special Education Technology*, 20(4). Retrieved February 13, 2009, from <http://proquest.umi.com/pqdweb?did=973240211&sid=1&Fmt=3&clientId=17185&RQT=309&VName=PQD>.
- Kame'enui, E.J., Carnine, D., Dixon, R., Simmons, D.C., & Coyne, M.D. (2002). *Effective teaching strategies that accommodate diverse learners* (2nd ed.). Columbus, OH: Merrill Prentice Hall.
- Kast, M., Meyer, M., Vögeli, C., Gross, M., & Jäncke, L. (2007) Computer-based multisensory learning in children with developmental dyslexia. *Restorative Neurology and Neurosciences*, 19. Retrieved Oct 26, 2008, from <http://graphics.ethz.ch/Downloads/Publications/Papers/2007/Jaen07/Jaen07.pdf>.
- Kauffman, M.J., Landrum, J.T., Mock, R.D., Sayeski, B., & Sayeski, L.K. (2005). Diverse knowledge and skills require a diversity of instructional groups: A position statement. *Remedial and Special Education*, 26(1), 2–6.
- Kelley, M. & Clausen-Grace, N. (2008). Ensuring transfer of strategies by using a metacognitive teaching framework. *Voices From the Middle*, 15(4), 23–31.
- Kroesbergen, E.H., & Van Luit, J. E. H. (2003). Mathematics interventions for children with special educational needs: A meta-analysis. *Remedial and Special Education*, 24(2), 97–114.
- Leach J.M., Scarborough, H.S., & Rescorla, L. (2003). Late-emerging reading disabilities, *Journal of Educational Psychology*, 95(2), 211–224.

- Loeterman, M., Paul, P., Donahue, S. (2002). Reading and deaf children. *Reading Online*, www.readingonline.org. International Reading Association, Inc. Retrieved October 9, 2008, from <http://www.readingonline.org/articles/loeterman/>.
- Lou, Y., Abrami, P., & d'Apollonia, S. (2001). Small group and individual learning with technology: a meta-analysis. *Review of Educational Research*, 71(3), 449–521.
- Lovett, M.W., Steinbach, K.A., & Frijters, J.C. (2000). Remediating the core deficits of developmental reading disability: A double-deficit perspective. *Journal of Learning Disabilities*, 33, 334–358.
- Maal, N. (2004). Learning via multisensory engagement. *Association Management*, 56(11), 61.
- MacArthur, C., Ferretti, R., Okolo, C., & Cavalier, A. (2001). Technology applications for student with literacy problems: A critical review. *The Elementary School Journal*, 101(3), 273–301.
- Macaruso, P., Hook, P.E., & McCabe, R. (2006). The efficacy of computer-based supplementary phonics programs for advancing reading skills in at-risk elementary students. *Journal of Research of Reading*, 29(2), 162–172.
- Magnan, A., & Ecalle, J. (2006). Audio-visual training in children with reading disabilities. *Computers & Education*, 46(4), 407–425. Cited in Ecalle, J., Magnan, A., Bouchafa, H., & Gombert, J.E. (2008, July 21). Computer-based training with orthophonological units in dyslexic children: New investigations. *Dyslexia* [published online]. Retrieved March 10, 2009 from <http://www3.interscience.wiley.com/journal/120840723/abstract>.
- Magnan, A., Ecalle, J., Veuillet, E., & Collet, L. (2004). The effects of an audio-visual training program in dyslexic children. *Dyslexia*, 10, 131–140. Cited in Ecalle, J., Magnan, A., Bouchafa, H., & Gombert, J.E. (2008, July 21). Computer-based training with orthophonological units in dyslexic children: New investigations. *Dyslexia* [published online]. Retrieved March 10, 2009 from <http://www3.interscience.wiley.com/journal/120840723/abstract>.
- Medina, J. (2008). *Brain rules*. Seattle, WA: Pear Press.
- Metiri Group. (2008). *Multimodal learning through media: What the research says*. Cisco Systems, Inc. Retrieved June 3, 2008 from <http://www.cisco.com/web/strategy/docs/education/Multimodal-Learning-Through-Media.pdf>.
- Moats, L.C. (2001). When older kids can't read. *Educational Leadership*, 58(6), 36.

- Moore, P.R., Rieth, H., & Ebeling, M. (1993). Considerations in teaching higher order thinking skills to students with mild disabilities. *Focus on Exceptional Children*, 25, 1-12.
- National Joint Committee on Learning Disabilities. (2008). *Adolescent Literacy and Older Students with Learning Disabilities: A Report from the National Joint Committee on Learning Disabilities*. Retrieved October 8, 2008, from www.ldonline.org/njcld
- National Research Council and the Institute of Medicine. (2004). *Engaging Schools: Fostering High School Students' Motivation to Learn*. Committee on Increasing High School Students' Engagement and Motivation to Learn. Board on Children, Youth, and Families, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.
- Planty, M., Hussar, W., Snyder, T., Provasnik, S., Kena, G., Dinkes, R., KewalRamani, A., & Kemp, J. (2008). *The Condition of Education 2008* (NCES 2008-031). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Pressley, M., Gaskins, I., Solic, K., & Collins, S. (2006). A portrait of benchmark school: How a school produces high achievement in students who previously failed. *Journal of Educational Psychology*, 98(2), 282-306.
- Purcell-Gates, V., & Strickland, D.S. (2005). Special education and family literacy: Perspective through the lens of critical discourse. *Reading Research Quarterly*, 40(2), 274-281.
- Ramus, F. (2003). Developmental dyslexia: Specific phonological deficit or general sensorimotor dysfunction? *Current Opinion in Neurobiology*, 13, 212-218.
- Rayner, K., Foorman, B.R., Perfetti, C.A., Pesetsky, D., & Seidenberg, M.S. (2001). How psychological science informs the teaching of reading. *Psychological Science in the Public Interest*, 2, 31-74. Retrieved February 13, 2009, from http://www.lifesci.sussex.ac.uk/teaching/C8531/psyc_sci_publ.pdf.
- Rose, D.H., Hasselbring, T.S., Stahl, S., & Zabala, J. (2005). Assistive technology and universal design for learning: Two sides of the same coin. In D. Eadyburn, K. Higgins, & R. Boone (Eds.) *Handbook of special education technology research and practice* (pp. 508-517). Whitefish Bay, WI: Knowledge by Design.
- Rose, D.H., & Meyer, A. (2000). Universal design for learning. *Journal of Education Technology*, 15(1), 67-70.
- Sagor, R. (2003). *Motivating students and teachers in an era of standards*. Alexandria, VA: ASCD.

- Samuels, S.J., & Wu, Y. (2003). *The effects of immediate feedback on reading achievement*. Unpublished manuscript, University of Minnesota. Available online: <http://www.tc.umn.edu/samue001/papers.htm> retrieved October 18, from http://www.tc.umn.edu/~samue001/web%20pdf/immediate_feedback.pdf.
- Scarborough, H.S. (2002). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S.B. Neuman & D.K. Dickinson (Eds.), *Handbook of Early Literacy Research* (pp. 97–110). New York, NY: Guilford Press.
- Schmidt, R.J., Rozendal, M.S., & Greenman, G.G. (2002). Reading instruction in the inclusion class-room: Research-based practices. *Remedial and Special Education*, 23(3), 130-140.
- Scholastic Research & Validation. (2008). *Response to intervention: An alignment guide for READ 180*. New York: Scholastic Inc.
- Scholastic Research & Validation. (2009). *Response to intervention: An alignment guide for System 44*. New York: Scholastic Inc.
- Shanahan, T. (2008). Implications of RTI for the Reading Teacher. In International Reading Association, *WIS Prevention - Response to Intervention: A Framework for Reading Educators* (pp. 105-122). Retrieved October 10, 2008, from www.reading.org.
- Shaywitz, S. (2003). *Overcoming dyslexia: A new and complete science-based program for reading problems at any level*. New York: Alfred A. Knopf.
- Sideridis, G., Mouzaki, A., Simos, P., & Protopapas, A. (2006). Classification of students with reading comprehension difficulties: The roles of motivation, affect, and psychopathology. *Learning Disability Quarterly*, 29(3), 159-180.
- Snyder, T. D., Dillow, S.A., & Hoffman, C. M. (2008). *Digest of Education Statistics 2007* (NCES 2008-022). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Stanovich, K. E. (1991). Word recognition: Changing perspectives. In R. Barr, M.L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Volume 2, pp. 418–452). New York: Longman.
- Stecker, P., Fuchs, L., & Fuchs, D. (2005). Using curriculum-based measurement to improve student achievement: *Review of research. Psychology in the Schools*, 42(8), 795–819.

- Strangman, N., & Dalton, B. (2005). Using technology to support struggling readers: A review of the research. In D. Edyburn, K. Higgins, & R. Boone (Eds.), *Handbook of special education technology research and practice* (pp. 549–569). Whitefish Bay, WI: Knowledge by Design. Cited in L. Anderson-Inman & M. Horney. (2007). Supported eText: Assistive technology through text transformations. *Reading Research Quarterly*, 42(1), 153-160.
- Strangman, N., Hall, T., & Meyer, A. (2003). *Text transformations*. National Center on Accessing the General Curriculum. Retrieved February 13, 2009, from: www.cast.org/ncac/index.cfm?i=4864.
- TeachingLD. (2008). *Understanding learning disabilities*. TeachingLD, Division for Learning Disabilities (DLD) of the Council of Exceptional Children. Retrieved January 22, 2009, from <http://www.teachingld.org/understanding/default.htm>.
- Tijms, J., & Hoeks, J. (2005). A computerized treatment of dyslexia: Benefits from treating lexico-phonological processing problems. *Dyslexia*, 11, 22–40.
- Tijms, J., Hoeks, J.J., Paulussen-Hoogeboom, M.C., & Smolenaars, A.J. (2003). Long-term effects of a psycholinguistic treatment for dyslexia. *Journal of Research in Reading*, 26(2), 121–140.
- Torgesen, J.K., Alexander, A., Wagner, R., & Rashotte, C. (2001). Intensive remedial instruction for children with severe reading disabilities. *Journal of Learning Disabilities*, 34(1), 35–58.
- Torgesen, J.K., Houston, D.D., Rissman, L.M., Decker, S.M., Roberts, G., Vaughn, S., Wexler, J., Francis, D.J., Rivera, M.O., & Lesaux, N. (2007). *Academic literacy instruction for adolescents: A guidance document from the Center on Instruction*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.
- Vaughn, S., & Denton, C. (2008). Tier 2: The role of intervention. In Fuchs, D., Fuchs, L., & Vaughn, S. (Eds.), *WIS Prevention - Response to Intervention: A Framework for Reading Educators, 2008* (pp. 51-69). Newark, DE: International Reading Association. Retrieved October 14, 2008 from http://books.google.com/books?hl=en&lr=&id=7nzIvpO0LGwC&oi=fnd&pg=PA51&dq=%22special+needs%22+%22decodable+text%22&ots=Y3plHa5e95&sig=ZVW0JIt_Plj6EsWEO-nRRewVBxE.
- Vaughn, S. and Roberts, G. (2007). Secondary interventions in reading: *Providing additional instruction for students at risk*. *Teaching Exceptional Children*, 39(5), 40-46.
- Wagner, R. (2008). *Learning to read: The importance of assessing phonological decoding skills and sight word knowledge*. New York, NY: Scholastic Inc.
- Wagner, R.K. (2009). *Scholastic Phonics Inventory Technical Guide*. New York: Scholastic Inc.

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